

〈原 著〉

肥満細胞からのヒスタミン遊離活性を 指標とした界面活性剤の刺激性評価

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Evaluation of Surfactants Skin Stimulating Effects on the Basis of Histamine Release from Rat Peritoneal Mast Cells

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Abstract

Histamine release activities of nine non-ionic surfactants from rat peritoneal mast cells were examined. These results were compared with their capillary permeabilities by intradermal injections to rabbit skin.

These surfactants presented dose-related histamine release activities. About POE cetyl ether series, the order of the activities dependent on binding number of ethylene oxide was $10 > 15 > 20 > 5.5 > 30$. While about POE(20) sorbitan fatty acid ester series, the order of the activities dependent on binding fatty acid was laurate $>$ palmitate \geq stearate = oleate.

A good correlation was observed between the capillary permeability for rabbit skin and histamine release in each series.

This method is considered to be available for one of in vitro screening methods to estimate the toxic effect of surfactants on the skin.

Key words

1. histamine
2. mast cell
3. non-ionic surfactant
4. cyto-toxicity
5. in vitro screening method